

# Guidelines for Work in Hingham's Historic Districts

The guidelines set out below allow the Hingham Historic Districts Commission (HDC) to apply these and other criteria for appropriateness in a meaningful and consistent manner, but with due regard for individual circumstances. Along with the standards and guidelines formulated by the commission, owners may wish to consult Article V of the Historic Districts By-Law, "Factors Considered by Commission in Making Determination on Application for Certificate".

The guidelines are meant to be instructive, and may be subject to modifications or additions. Features that are not listed may still be subject to review. Any change to the exterior of a property located in an historic district that is visible from a public way requires a review and a certificate from the Historic Districts Commission.

**Additions** should be compatible with the existing building and neighborhood both in overall character and in specific elements. They should not damage or alter the character-defining features of the existing building, which should be preserved. The key factors to be considered include the **scale, proportions and massing (volume)** of the addition; the **shape and style**; the **siting**, and **building elements** such as windows, doors, trim, porches, decks, materials and finish. Generally speaking, all elements of a new addition will be reviewed in light of the guidelines for those elements.

**Air conditioning** units that are permanent fixtures (ex: compressors) must be reviewed by the HDC for site and location to ensure that they do not damage or obscure important architectural features or can be visible from any public way. In general, this type of modern equipment should be sited in the rear of the building and may be screened by vegetation, walls or fences subject to approval by the HDC. Air conditioning units that are removable may be installed without an application to the HDC; however, window air conditioning units may not be installed in windows on the front façade.

**Antennas for** television or radio are generally allowable, subject to regulations affecting their height and form. Antennas may be removed and/or replaced by cable installations without application to the commission.

**Architectural elements** include a range of features, from major building components such as doors, windows, porches and balconies to decorative details such as cornices, columns, pediments and railings. Large or small, they play a key role in defining the style of a building and so deserve particular attention and respect. Details for new construction may be required at  $\frac{1}{8}$  full size or  $\frac{1}{4}$  full size.

Original elements should be retained to the extent possible. Alterations should be carried out in a way that does not damage or hide these elements. If an architectural element is missing, several options exist. It may be possible to document the missing piece through pictorial evidence such as a photograph or the physical evidence of an outline on the building surface. Careful study of other buildings from the same period can supplement these clues. Following possible documentation and study, an accurate replacement can be obtained and correctly positioned on the building.

Architectural salvage yards are a good source for authentic period features. Catalogs and websites dedicated to reproduction period features can also be a good source when replacement pieces are necessary. Alternatively, millwork contractors can create precise reproductions. Stock patterns may be approved if they accurately reproduce the original elements in proportion and style, and if they are appropriate to the period of the building. Even when stock elements are well made, however, the range of styles may be limited.

The use of architectural elements that falsify or confuse the history of a building must be avoided, e.g. installing an Arts and Crafts door on a Cape Cod style home. Features that do not reflect the style and period of a structure are meaningless when they are used in buildings from an earlier or a later time. Architectural elements are closely linked to particular styles and often reflect the manufacturing techniques of the periods.

**Artificial or imitation materials** are discouraged and will normally not be approved. Composite materials may be considered for special circumstances.

**Asphalt shingles** may be repaired, replaced or substituted for wood shingles, and should be predominately black, dark gray or weathered dark wood tone. Any existing color may be proposed, although it may not be approved. New colors may also be considered. Flashings and drip edges shall be lead, lead-coated copper or copper (See Roofing); aluminum and stainless steel will not be approved.

**Awnings** will be considered if they are made of canvas. Metal or vinyl awnings will not be approved.

**Basketball hoops** may be installed without an application to the HDC.

**Brickwork** should be sand or water-struck to match existing work, of the same size and laid in the same pattern. New mortar should not be darkened artificially but should be allowed to weather over time. Pointing mortar should match the original in color, style, strength and consistency. Joints shall match existing joints including tooling. Sample panels may be requested by the HDC. Strength is a particularly important factor because the brick itself can be damaged if the mortar used involves too high a concentration of Portland Cement. Mortar was historically formulated to be softer than brick, therefore, mortar joints will need to be repointed every 50 years or so. Mortar within a wall indicates original color more accurately than surface mortar, which becomes soiled and tends to darken with age. All new brick and stone require HDC review. Brick veneer will not be approved.

**Chimneys** often require repair and can be hazardous if overlooked. Repairs may be undertaken subject to the guideline on brickwork above. Proposals to alter, remove or replace a chimney will be reviewed in light of the guidelines for architectural elements as well as for brickwork. Key considerations include height, material, form and location. Existing chimney caps shall remain or be replaced in kind. False chimneys will not be approved.

**Cleaning** of buildings does not require a certificate from the commission. However, it is recommended that cleaning techniques be as gentle as possible. A mild soap and water solution is the best choice for painted surfaces. Liquid bleach diluted in water can be used first to remove mildew.

Sandblasting any structure is extremely dangerous to old surfaces and masonry and should be avoided. Chemical cleaning agents should be spot-tested in an inconspicuous place. Power washing can damage surfaces and can be absorbed into interior plaster and insulation. Environmental hazards of bleach and other chemical cleaning agents must be carefully monitored.

**Decks, patios and terraces** should be compatible with a building and its site in design, proportion and materials. In reviewing plans for these elements, the commission will examine ancillary features such as fencing and lighting to gain a perspective on the overall design.

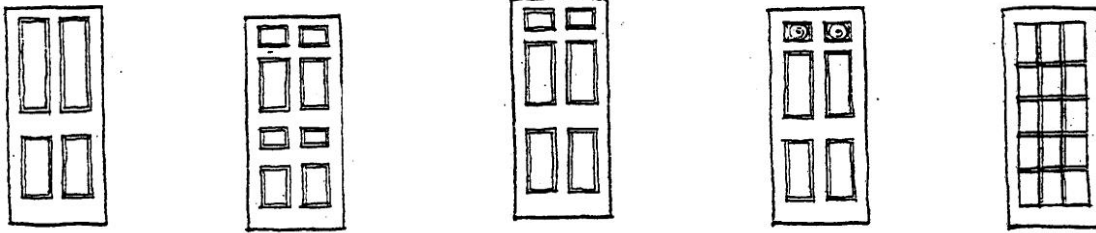
**Demolitions or partial demolitions** within historic districts **must be reviewed** by the commission and may require a report from a structural engineer. Site visits will be required. The commission's authority covers outbuildings as well as the principal structure on a property. Demolitions should be contemplated with great caution, since they irreversibly alter an historic building, its site and the neighborhood; less drastic alternatives may be available. The commission may approve an application to demolish an addition that is neither original nor appropriate.

Properties located outside historic districts may be subject to the Demolition Delay By-Law, a preservation tool voted by Town Meeting to delay the loss of historically or architecturally significant structures so that alternatives to demolition can be explored. To determine if your property is subject to the Demolition Delay By-Law, please contact the Historical Commission Administrator or look for the property address in the Comprehensive Community Inventory of historic assets on the Town of Hingham Historical Commission website.

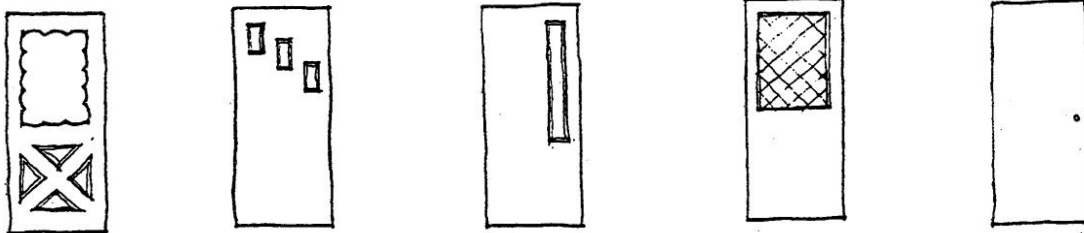
**Display of date** is encouraged when the date and historic name of a building can be documented. Property owners who wish to obtain an approved sign should apply to the *Hingham Historical Society, 34 Main Street; Hingham, Massachusetts 02043*. Applications are available from the Historical Society.

**Doors, Doorways, Storm and Screen Doors** may be installed, replaced, altered, relocated or removed subject to approval by the commission, which will review the proposed work in light of the significance of the change. New entryways may become necessary during the evolution of a building. The door opening and surround (see Glossary - Surround) should be compatible with the existing building in location, proportions, design and decoration. The door itself should be appropriate to the character and period of the house in design and details, especially the arrangement of panels and glass. Old doors can be repaired even if they are heavily ornamented. It is not difficult to find new replacements that reproduce the old panel arrangements and moulding profiles.

## DOORS AND DOOR STYLES



TRADITIONAL AND APPROPRIATE ENTRY DOORS

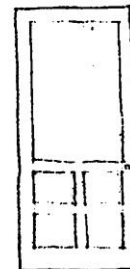


INAPPROPRIATE ENTRY DOORS

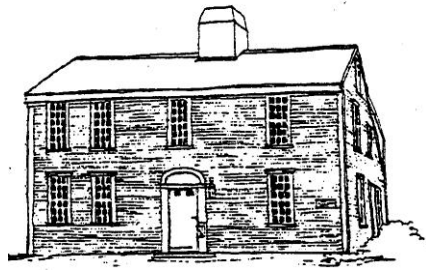
## STORM AND SCREEN DOORS



PREFERRED STYLE OF  
INTERCHANGEABLE  
STORM / SCREEN DOOR



APPROPRIATE  
SCREEN DOOR



## STYLE APPROPRIATE ENTRYWAYS

**Dormers** may be installed, relocated or removed subject to the guidelines for architectural elements. Existing dormers should not be altered in scale or form, while new dormers should match existing ones. New dormers will be reviewed for style and placement. The most common types of dormers are:

### Shed Dormer

#### Relationship to Front Wall

- Dormer should not be set flush with the front wall. The dormer should be set back a minimum of 1ft. 8 in.

#### Relationship to Gable End

- The setback from the gable end should be at least 3ft. 6 in.
- A shed dormer shall not exceed 15 feet or  $\frac{1}{2}$  the main roof length.

#### Placement

- The dormer should be offset toward the rear of the building. Paired dormers should be placed symmetrically on the elevations.

### Roof Pitch

- The dormer pitch may vary from the pitch of the main roof; it cannot be flat nor rise above the ridge line of the main house.

### Insert Roof Decks

- Decks cut inside of the roof will not be approved

### Relationship to Windows

- Dormer windows should be balanced in style, alignment and proportion relative to the windows below the dormer. Exceptions can be made for Queen Anne style buildings or other intentionally picturesque historic styles where asymmetrical placement and proportion are appropriate.

### Wall Material and Color

- Dormer wall siding should be the same material as the principal structure. If this has multiple colors as part of its original design, it may be painted in a contrasting color.

### Gable Dormer

#### Relationship to Front Wall

- The dormer should be set back a minimum of 1ft. 8 in.

#### Relationship to Gable End

- The setback of the dormer side wall from the gable end should be at least 3ft. 6 in.

#### Relationship to Ridge

- A gable dormer should be located a minimum of 1ft. from the roof ridge.

#### Placement

- Gable dormers in combination should be placed symmetrically. The distance between dormers should not be less than ½ the width of each dormer.

#### Relationship to Roof Pitch

- The pitch of the gable dormer should match the pitch of the main roof.

#### Relationship to Windows

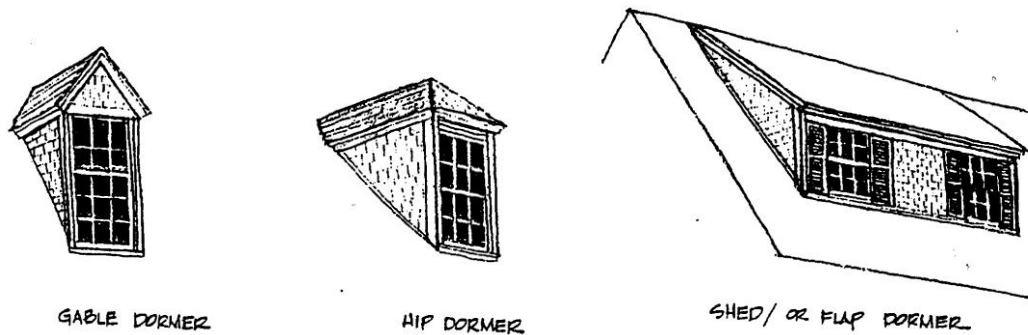
- Dormer windows should not extend into the pediment wall surface, unless it is appropriate to the style of the building.

#### Wall Materials and Color

- Dormer wall siding should be the same material as the principal structure. If the principal structure has multiple colors as part of its original design the dormer may be painted in a contrasting color.

### Flush Dormer

- A flush dormer is located in the same plane as the wall below. There is no sloping roof below the dormer window.



## TYPES OF DORMERS

**Driveways, driveway aprons and parking areas** may be installed or relocated subject to a review of their relationship to the site and the existing buildings, material(s) to be used and the streetscape. Driveways may be made of several different materials: asphalt, pea stone, brick, granite, cobblestones, as well as precast concrete cobblestones and bricks. Repairs may be undertaken using materials that match the existing materials. Use of pervious materials (see Glossary – pervious materials) is encouraged.

**Fencing and boundary walls** are an important aspect of the setting for a property and of the streetscape and should be compatible with the property in material, proportion, style and color. Wood and wrought iron fences and stonewalls are each appropriate for certain period structures. Elaborate fences are suitable for elaborate houses; simple houses should have simple fences. Stone walls should be made of local stone and constructed in the style of the building. New fences, or walls should not act as visual barriers, and should not obscure a building or residence. PVC or plastic fencing, trellises, arbors or gates will not be approved. Chain link, wire type and stockade fences will not be approved. Bear in mind that fencing may be subject to height and setback requirements imposed by other town departments, independent of the review by the HDC.

**Flags, banners and flagpoles** visible from a public way must be approved by the HDC. Commercial flags are subject to the HDC's guideline and other town regulations concerning signs. Please contact the Town of Hingham Veterans' agent at 781-741-1440 to obtain rules and regulations for displaying the American flag.



**Gutters and downspouts** are generally made of wood or baked finish aluminum. The commission will allow installation of new aluminum gutters in place of wood. Although aluminum has the advantage of low maintenance and a permanent finish, it is not without drawbacks. Aluminum gutters are vulnerable to denting and bending, and may look awkward against the original trim of an old building. Wood gutters do require regular painting, oiling and sealing, but they will endure if they are properly maintained. When changing from wood to aluminum, particular care should be taken to avoid damaging or removing significant building details. Downspouts may be round or square and should not be corrugated. Downspouts should be painted to match the material to which they are attached, whether the trim or the body of the structure. It may be possible to correct problems with gutters without replacing them.

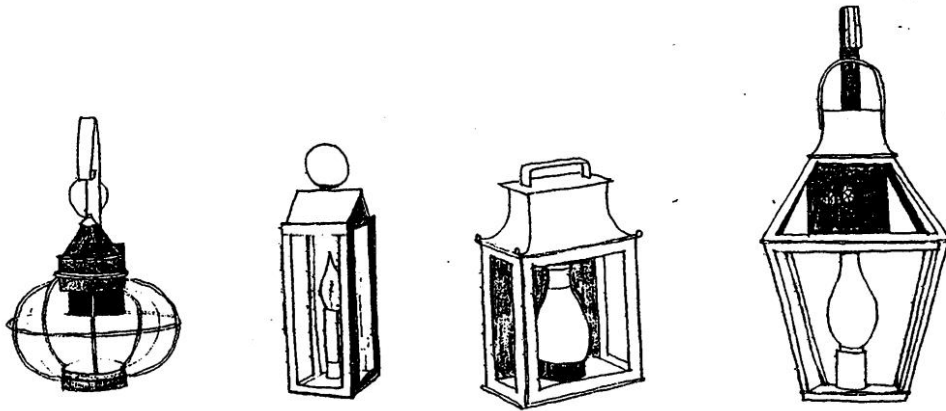
**Hardware** on a building exterior, such as locks, hinges and doorknobs, should be consistent with the period of the building. Many excellent reproductions of period hardware are available today. Owners may want to check catalogs and shops or stores that sell period hardware, many of which advertise in magazines featuring period homes.

**Interior elements** do not require a certificate from the commission unless an interior alteration has an impact on exterior features that are visible from a public way.

**Landscaping** plans that have a significant impact on the overall appearance of the site are subject to review, as is the landscape design for new construction. Landscaping that obscures historic structures will not be approved. Landscaping is exempt from review and certification by the commission if it represents normal maintenance. **Hardscape** features such as a patio, walkways or fences are subject to review. Protection of plantings of great age and beauty will be considered when reviewing new hardscape features and other construction.

**Light fixtures** subject to review by the HDC include those located on a building exterior, on a porch or deck, on pathways and paved areas and elsewhere around a property. They should be appropriate in design and scale to the character of a building and its setting. Fine adaptations of period fixtures are readily available. The intensity (foot-candles or lumens) and distribution (beam spread and direction) of light will also be taken into account, particularly as it affects neighboring properties (See Glossary - light trespass). Lights must be appropriately shielded from the night sky by funnels or louvers or a reduction in

lamp output. (See Glossary – light pollution). HPS and mercury vapor lamps are unacceptable in historic districts due to their color rendering index (CRI).



## LIGHT FIXTURES

**Maintenance** including repair or replacement in kind requires a Certificate of Non-Applicability to keep an accurate record of work done on a building exterior in an historic district. The By-Law does not impose any obligations on property owners with respect to maintenance.

**Mailboxes and mail slots** may be installed without application to the commission. A receptacle that is in keeping with the period of a building or any style that is simple and unobtrusive is suitable.

**Materials** used to repair, alter or add to historic structures must match existing materials. Alternative materials may be approved depending on the appropriateness of the material to the age and architectural style of the structure and on the location where the material will be used. Refer to Preservation Briefs 9 and 16. These Technical Preservation Briefs and others can be found on the National Park Service website: [www.nps.gov/tps/how-to-preserve/briefs.htm](http://www.nps.gov/tps/how-to-preserve/briefs.htm)

**Mechanical equipment** such as meters, HVAC units, plumbing vents, pipes, fan exhausts, transformers and similar equipment shall be located to minimize the visual impact on an historic structure and streetscape. The HDC also has jurisdiction related to mechanical equipment that is installed on or protrudes through roof surfaces or alters soffits, eaves or exterior walls. The location, dimensions and outward appearance of these items must be provided with the

application. The HDC also has jurisdiction over the screening of mechanical equipment whether or not it is attached to the building. If venting of warm air from the attic is necessary, various types of vents should be considered. Select a venting method or combination of methods that will be the least obtrusive to the architecture and will meet the minimum air circulation or venting requirements for the square footage of the attic space. Vents should be painted to match the color of the surface on which they are installed.

**New construction** in historic districts is subject to review. The new structure must be compatible with the surrounding structures and streetscape. Among the factors to be taken into account are height, scale, massing (volume), orientation toward the street, site coverage, roof form, dormers, door placement and style, window placement and muntin pattern, architectural details (see Glossary – architectural details), materials, color, landscape and hardscape. Applicants should review the HDC guidelines for each element.

**Outbuildings** are subject to review as is the primary structure on a property if they are visible from a public way and fall within the boundaries of an historic district. This includes structures such as barns, garages, storage sheds, greenhouses, workshops, pool houses, playhouses and gazebos. Newly-constructed outbuildings shall be compatible with the primary structure in scale and proportions, and should be constructed using the same or complementary materials. New construction and alterations to existing outbuildings are covered by the relevant guidelines.

**Paint and stain colors** are associated with particular architectural styles and periods, reflecting settlement patterns and development in specific geographical locations. The HDC uses and approves colors from the palette developed by Historic New England. When purchased from Historic New England, “A Guide to Color, Styles and Architectural Periods” accompanies the color palette. The palette and guide can be seen at the HDC office.

Color is an important element of a building and should reflect a balanced consideration of authenticity and personal preference. Property owners may choose to retain an existing color, or they may select a new color from the approved palette. In some instances, the choice of a period color will need to be based on the most dominant style of the building rather than on its actual age. The commission is available on an informal basis to discuss period colors or to advise on possible color choices.

It is important to note that colors that are advertised as “historic” or “traditional” may have very little justification for being designated as such. Many so-called Colonial or Williamsburg colors, for instance, are based on the Colonial Revival of the late 1800’s, and not on the actual Colonial period 200 years earlier. The pale shades that were popular during the Revival were inspired by the aged, weathered tones of old Colonial buildings, not the much stronger original hues. Homeowners interested in recreating early colors can consult with a paint conservator to test for the earliest paint application used on a structure.

Although stain may be used on new or previously stained wood, paint is the only option for previously painted surfaces, whether of wood or masonry. Either oil or latex paint may be applied over oil paint, but oil may not be used over latex. Whichever type is selected, bear in mind that a substantial buildup may lead to paint failure. Old layers of paint may need to be removed by hand, because sandblasting leaves a rough surface and water-based techniques may penetrate old wood. Removing paint by any means can damage masonry walls, but loose paint must be taken off before repainting. Unpainted elements shall be left unpainted in the interests of historical accuracy.

Many excellent books are available on the topic of historic paint colors. One such guide can be obtained on loan from the Historic Districts Commission office: Painting Historic Exteriors: Colors, Application and Regulation; a Resource Guide for Historic Commissions, Historical Societies, Historic House Museums, Historic District Commissions, and Preservation Planning Staff by Susan E. Maycock and Sarah J. Zimmerman, published by the Cambridge Historical Commission in cooperation with the Bay State Historic League. The guide is also available for purchase from the Cambridge Historical Commission website.

**Porches** can be the dominant feature of a building façade, and they should be consistent with the period and style of the building. Size, architectural style, detailing and decorations, and features such as columns and railings are important elements of a porch design. Proposals to add, alter, remove or enclose a porch require HDC review. New porches require drawings at a scale of 1/2” = 1 ft.

Porches may require a good deal of maintenance because of their exposure to the weather, and it may be tempting to deal with problems by transforming or even removing the porch. Following a review by the HDC, such an approach may be acceptable if the porch is a later and perhaps inappropriate addition. Less dramatic solutions are preferred when an original porch contributes significantly to the architectural character of a building.

**Roofing** may be repaired or replaced using matching materials. New material should be consistent in color and style with the period of a building. If asphalt shingles are used, black, gray or weathered dark wood tone is recommended. White and light colors are not appropriate for buildings of the 19<sup>th</sup> century and earlier. Red cedar is recommended for wood roof shingles. White cedar is impractical as it has a very short life span. Whatever material is used, distinctive patterns must be retained or reproduced to the extent possible. Flashing must be copper, lead or lead-coated copper. Changes to slate, tin, or copper must be reviewed by the HDC.

**Satellite dishes** must be reviewed by the HDC. They should be installed in locations which (a) create the least disturbance to the historical appearance of the building, (b) involve the least additional structural alterations and (c) are screened, hidden or otherwise shielded from view from any public way. If mounted on a roof, it should be located behind chimneys, sloped roofs and parapets or placed in the central portions of the roof not visible from any public way. The HDC finds they are obtrusive as well as historically and architecturally inappropriate in historic districts. If the dish can be located so that it is not visible from any public way, it will still require a Certificate of Non-Applicability.

**Shutters** (blinds) may be installed if they are consistent with the period of a building and correctly proportioned to the dimensions of the windows. They must be made of wood and be functional shutters, hung to drain when closed with appropriate shutter hardware. Shutters may not be nailed or screwed to the siding. Addition of shutters to a structure must be reviewed by the Commission. Existing pintels (See Glossary – pintels) must be retained where shutters are not replaced as evidence of their existence.

**Siding** may be replaced or repaired using the existing material and design. The exposure of the existing siding to the weather should be noted at the time of the repair. To protect a building's intrinsic value, all new or repaired siding should be installed at the same exposure rate or at an exposure rate that reflects the building's original historic siding details. All siding on additions should match existing structures in like and kind. Changes of materials or design are subject to review by the HDC.

Aluminum, vinyl, and concrete siding will not be approved. Artificial siding literally covers up the distinctive surfaces and features of older buildings. It may hide and thus perpetuate rot and insect damage. Artificial siding is neither

maintenance-free nor easy to repair. It confers no special insulation value or fire protection; and it may cost more than repairing and painting wood siding. Wood siding is an integral part of old buildings and their architectural character. It is easy to maintain, less susceptible to the weather than vinyl (which can shatter in cold weather and fall off in the heat), and more resistant to dents than aluminum.

If an old building has been re-sided with vinyl, aluminum, or concrete it may be worthwhile to remove the synthetic siding and restore the original material underneath. Before restoring any siding applied prior to 1978, it is advisable to consult a Lead Abatement Company to confirm that there are no lead painted surfaces.

**Signs** in historic districts must comply with the Zoning By-Law. They are also subject to review by the HDC. Size, scale, color and basic design all help to determine whether a sign is well integrated with the architectural character and features of a building. A sign should harmonize with the design elements of a facade rather than disrupt or obscure them. HDC review does not extend to temporary, portable signs such as those a contractor might display at the site of a job. Such signs must be kept in place for less than one year.

**Skylights** are subject to HDC review and will only be approved on roofs not visible from a public way. The HDC will consider the use of skylights in historic structures only if it is possible to document (through photographs or site inspection) the prior existence of a skylight. Restoration would require that the new skylight be the same or as close as possible to the same size and location as the original skylight.

**Solar Energy Systems** that are visible from a public way require HDC review. A solar energy system is a device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generating, or water heating.

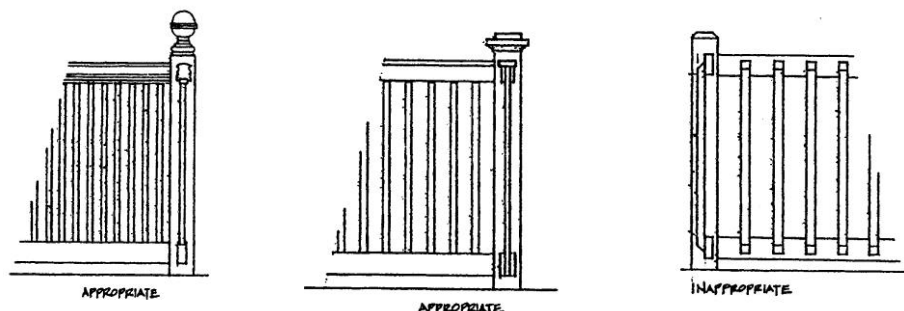
A solar energy system shall be placed in a location that minimizes visibility from any public way. The application shall state the location, dimensions and design of equipment to be placed on the exterior of a building, and the route of exterior wiring. Scaled drawings, manufacturer's specifications and photographs of similar installations must be included in the application. When ruling on an application for a Certificate of Appropriateness for a solar energy system, the HDC shall consider the policy of the Commonwealth encouraging the use of such systems

and shall protect solar access (M.G.L. ch 40C §7). Solar energy systems shall be installed to meet the Secretary of the Interior Standards for Rehabilitation and be sensitive to the historic environment. Installation, whether on a rear ell, subordinate wing, accessory building or on the ground, must have negligible visual impact upon the site as a whole. If a solar energy system is placed on the ground, it shall be positioned in a limited or no-visibility location in a secondary area of the property. On buildings, systems shall be set back on a flat surface or placed behind an existing architectural feature (parapet, dormer, chimney, etc.), whenever possible.

Solar energy systems may not be installed on the roof of a primary elevation of a building unless other options have been explored and eliminated. Pitch and elevation shall be adjusted to reduce visibility from the public way. The historic character of a property must be retained and preserved. Therefore, installation shall not involve the removal, covering or altering of significant character-defining features of a building. Roof slopes, dormers, chimneys, windows, shutters and other architectural features shall not be altered to accommodate solar energy systems. Solar shingles, laminates, glazing or similar materials shall not replace historic materials such as slate. Roof integrated solar shingles must be low or non reflective.

If a solar energy system will not be visible from any public way, either the contractor or the homeowner must apply for and receive a Certificate of Non-Applicability before such installation. The application must state the location of the installation, the dimensions and design of equipment to be placed on the exterior of a building, details of operation and the route of exterior wiring, if any.

**Steps, stairways and railings** are an important feature of entryways and porches. Where possible, original features and detailing shall be retained or repaired in the same design and material. New construction must be reviewed by the HDC and must be compatible with the original structure.



PORCH RAILINGS

**Stonework** may be repaired, replaced or extended using the existing type of stone, jointing, pointing, color and finish. New stonework must be appropriate to the period and character of the building. Artificial materials will not be approved. Veneers are subject to review.

**Storms/screens doors and windows:** See doors and windows.

**Story Poles** are a tool to assist the HDC, the public and the property owner in the review of new construction. They assist in making determinations regarding location, appropriate mass, bulk and scale, neighborhood compatibility, and/or minimization of impacts to important public scenic views. Therefore, the accuracy, readability, and articulation of story poles are important to fully understand the proposed project. Actual construction, however, is subject to compliance with approved plans, rather than with representations from the story pole installation.

**When Required**

- Story Poles are requested, on a case by case basis, by the HDC. Although the HDC may request certain modifications for individual cases, general guidelines for the installation of story poles are as follows:

**Standards**

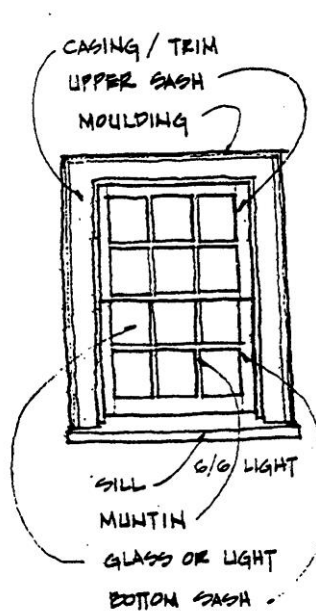
- Placement of story poles must be sufficient to show the location, mass, bulk, height and scale of the structure.
- Story poles do not have to and should not depict all the articulations of the building.
- Building corners, significant elements, length of façade within a specific view shed, and ridgelines should be easily discernable.
- The building footprint should be outlined with stakes, tape, construction netting or other visible elements. Changes proposed in grade, with finished height and elevations, should be shown by color coding the stakes/poles.
- Story poles should be made of 2x4 lumber or other sturdy material, and should be braced for safety purposes. PVC piping is not acceptable in most cases.
- Story poles will be installed on a date determined with the property owner, and must remain in place through the day of the scheduled HDC hearing. The property owner should notify the HDC Administrator when the story poles have been erected and ready for review.



**Stucco repairs** should duplicate the existing surface as closely as possible in color, texture and overall appearance. Original stucco should not be painted in New England as it does not adhere to stucco surfaces.

**Swimming pools**, tennis courts and similar recreational facilities are permitted in historic districts and are subject to review by the HDC for landscape, hardscape, and location.

**Windows** are one of the most important character-defining features of a structure. They provide scale, profile and composition to a façade. Historic windows have aesthetic attributes which can't be duplicated by most replacement windows. Federal preservation guidelines advise that windows should be considered significant to a building if they:



1. are original,
2. reflect the original design intent for the building,
3. reflect period or regional styles or building practices,
4. reflect changes to the building resulting from major periods or events; or
5. are examples of exceptional craftsmanship or design.

Proposals for and inquires about window replacement are presented to the HDC on a regular basis, a reflection of the rapid growth of the window replacement industry. Property owners are sometimes reluctant to hear the case for restoring historic wood windows as opposed to their replacement.

The benefits of window restoration can be summed up under three categories: Sustainability, Energy Efficiency, and Historic Character.

### Sustainability

An important facet of preserving historic buildings is the retention of original components. Like most structural elements of older, wood-framed buildings, historic wood windows were milled from old growth lumber that can last centuries, even when not properly maintained. Their sustainability is complemented by the fact they were carefully constructed with mortise and tenon joinery to fit tightly into the window openings of a house with extreme care and craftsmanship. Mass-produced wood replacement windows are typically constructed of new-growth lumber, often with glued-together finger joints and are highly susceptible to rot. The preservation of an old window maintains an irreplaceable, sustainable resource.

With the abundance of “maintenance free” replacement window options on the market today, it’s not surprising that property owners are often inclined to do away with old wood windows. “Maintenance-free” is misleading since any product that is in constant operation and is susceptible to seasonal fluctuations and weathering will need maintenance. Replacement windows typically have plastic and metal parts that become outmoded over time, making them difficult (if not impossible) to repair. Vinyl windows are prone to denting, warping and fading in high temperatures. In most cases a wood replacement sash has aluminum or vinyl exterior cladding meant to protect the wood as an alternative to storm windows. However, if moisture finds its way in, through weep holes or other infiltration sources, the new growth lumber shielded beneath the cladding can quickly rot.

### Energy Efficiency

Much like sustainability, energy efficiency is an important factor in the “green” discussion and is often the primary reason homeowners give for replacement of their windows. The generally erroneous notion is that older wood windows are not as energy efficient as today’s double glazed replacement models. However, window replacement companies will often compare their product to an unrestored wood window with little or no weather stripping and a poor (or no) storm window. With proper repair and maintenance coupled with weather stripping and a quality storm window, a single glazed historic wood window will have a comparable level of energy efficiency to that of a double glazed replacement window. Industry guidelines indicate that the addition of a storm window to an existing single glazed window will reduce the energy loss through the window area by approximately 50%. As replacement window manufacturers will attest, the best insulation on a small scale is dead air space. The extra dead air space created with a sealed storm window (typically 2”) means more insulation

and increased energy efficiency. Replacement window dead air space between the double-glazing is only 1/16 to 1/32 of an inch.

Despite the wasted financial investment in replacement windows, not to mention the petrochemical environmental dangers inherent in vinyl windows and/or replacement windows, it remains difficult to convince owners of historic homes that repair/restoration is the most cost effective investment concerning windows.

### Historic Character

A third reason to restore existing wood windows is the retention of character-defining features of historic wood windows that are nearly impossible to duplicate with double glazed replacement windows. As mentioned earlier, the muntin profiles and old glass in wood windows are distinct characteristics of an historic facade. Replacement windows or sash rarely have the same details. The traditional 1/2 inch or 5/8 inch exterior muntin with a putty bead is difficult to reproduce in an insulated glass, true divided light window, and is costly. Many wood replacement windows have a muntin at least 7/8 inch wide with an inappropriate moulded profile affixed to the glass and not actually holding individual panes of glass (referred to as a “simulated divided light” to simulate a true divided light profile). Cheaper models, typically vinyl or aluminum windows, feature removable grilles or grilles between the glass, providing no profile, depth or shadow lines. Some replacement windows will decrease the overall glazed opening by as much as 3” in width, with a significant loss of light and alteration of the appearance.

Replacement windows will often require a change in the window’s rough opening because these products are based on national standards and do not match “Boston Pattern” dimensions window sash sizes that have been standard in the Boston area since the 18<sup>th</sup> century. This will involve an increase in vinyl or aluminum framing members to hold the replacement window properly, detracting from the historic character of a building. Custom sizing will add to the expense of replacement windows.

It is often argued that storm windows have a negative impact on the historic character of wood windows. An important point to consider is that storm windows have been used for over 100 years. Although aluminum storm windows do not replicate the appearance of wood storms, they are allowed without review by the HDC in historic districts and are always preferred to window replacement unless the windows themselves are judged to be not significant. Storm windows are a fully reversible alteration that protect the original fabric of the building and can make the window assembly as energy-

efficient as replacement windows. For optimal results, the storm windows' meeting rails should correspond to the position of the existing meeting rails of the sash and match in color.

### Replacement Windows vs. Replacement Sash

In some cases an old wood sash may be beyond repair. In such a situation replacing the historic, single glazed wood sash with a reproduction wood sash is the preferred option. It is important that the new sash have the same number of lights (unless the existing sash are themselves inappropriate replacements – contact the HDC for advice). Coupled with a quality storm window, this solution satisfies much of the rationale for restoration listed above.

It is essential to distinguish between “windows” and “sash” especially when discussing their potential replacement. Replacing a window means removing the entire window including the sash, jambs, the interior and exterior casings and the sill and installing an entirely new unit. This is often problematic because the casings will almost inevitably have different dimensions from the original, leaving gaps against both exterior and interior finishes. Unless specially ordered, modern windows will have a different configuration of casings, stops and screens, dimensionally thinner sills and casings, and will sometimes occupy a different plane on the wall.

### Replacement Sash

Replacing a sash means replacing the moveable parts of a window leaving the casings, jambs and sill intact. There are two approaches to replacing sash:

1. Replacing the sash and balances only. Locally made Boston Pattern sash fit window openings from all periods. Sash can be replaced with new spring balances that eliminate sash weights and allow weight pockets to be filled with insulation. This operation may have little or no effect on the architectural character of the building.
2. Replacing the sash with a new window, within the existing jambs. Some manufacturers offer replacement windows containing both sash and jambs that are made to fit within the existing jambs. This may seem like an attractive alternative but the additional width of the extra jambs and balances introduces new visual elements and can significantly reduce the size of the glazing.

The HDC's preference is to retain true divided-light windows whenever possible, thus existing windows should be repaired, not replaced. For houses of particular historical significance (due to age, style, owners or events) this preference will generally not be waived. There are local craftspeople whose business is

exclusively the restoration of old windows. The HDC office maintains contact information for local craftspeople.

If a replacement window is proposed, it should not have muntin bars greater than 7/8" wide.

If a window has insulating glass, it should have:

1. permanently applied muntins no wider than 7/8"
2. internal spacer bars

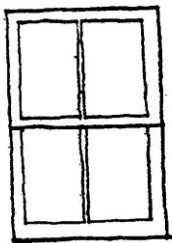
A replacement window should not:

1. have flat muntin grids applied to the inside or outside panes, or removable muntin grids
2. be vinyl or metal clad. Wood frames and sills should not be metal panned.

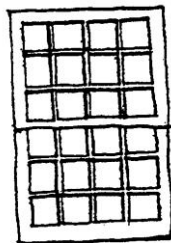
NOTE: The dimensions of window openings, jambs and sashes should not be changed.

*Window Guidelines courtesy of the Cambridge Historical Commission*

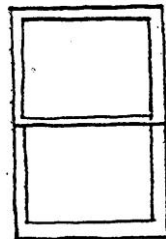
## WINDOW PATTERNS



2/2 LIGHT

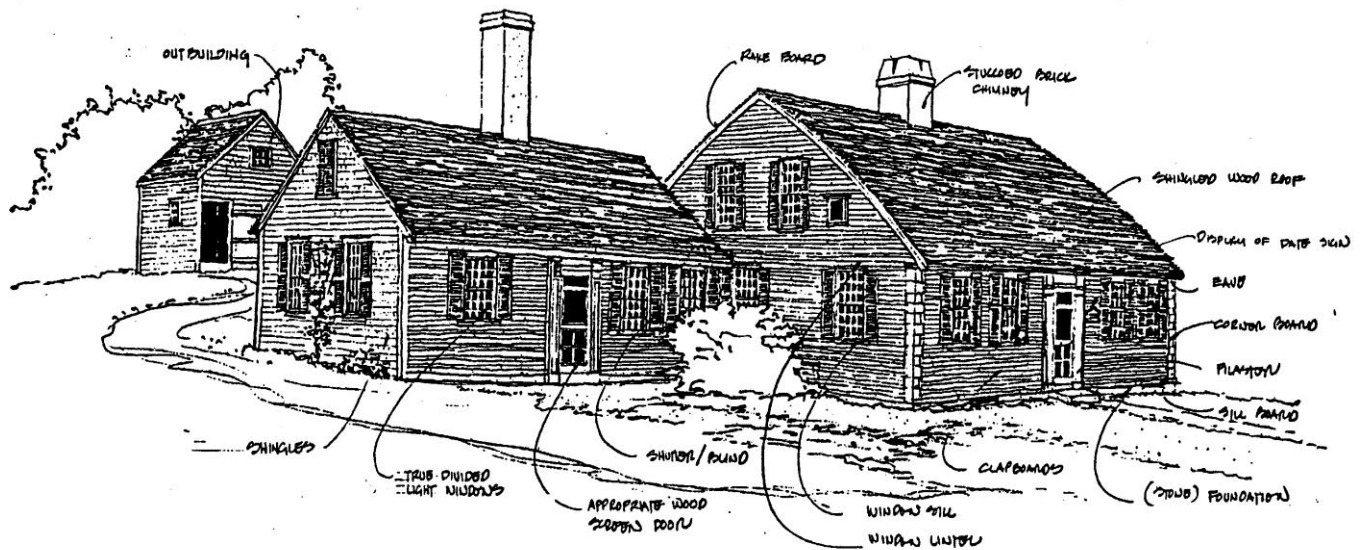


12/12 LIGHT



1/1 LIGHT

## Architectural Terms and Styles



# Architecture Glossary

**architectural elements** - the unique details and component parts that, together, form the architectural style of houses, buildings and structures.

**architectural style** - the vocabulary used to classify buildings according to their appearance, structure, materials, and historic period. Buildings are said to belong to the same classification (or style) when they share many of the same characteristics, e.g., roof shape and pitch; window size, shape and placement; door shape and placement; decorative details such as brackets and cornice trim; construction materials such as brick, stucco, or wood

**awning window** – a window attached at the top of the window, which pushes out from the bottom to open

**balloon framing** - a method of wood framing (begun in the 19th century) where the exterior walls are continuous from foundation to roof plate, and all the framing members are secured with nails

**baluster** – one of a series of uprights, often vase-shaped, used to support a handrail

**balustrade** – fancy, wooden ornately carved scrollwork, attached to and hanging down under the eaves of the projecting edge of a gable roof

**baseboard (skirting board)** – interior finish trim hiding the wall and floor junction

**bay** – sections of a building, usually counted by windows and doors dividing the house vertically (related to massing)

**bay window** – an alcove projecting from an outside wall and having its own windows and foundation

**board and batten** – a siding for a house consisting of wide vertical boards with strips (battens) covering where the boards join

**bond** - the pattern in which bricks are laid, either to enhance strength or for design. Types of bond include stretcher, English, header, Flemish, garden wall, herringbone, basket, American, and Chinese

**bracket** – historically, a support element used under eaves or other overhangs. In Victorian architecture, exaggerated brackets used under wide eaves are decorative rather than functional.

**bullseye window** - small oval window, set horizontally

**capital** – top part of a column, usually decorated. (see “column” for the three classical Greek Orders)

**carpenter gothic** – ornate wood decoration; also called gingerbread, carpenter’s lace

**cast-iron – iron**, shaped in a mold, brittle, hard, cannot be welded; in the 19th century it was used in fencing and in American commercial architecture, with cast-iron units used to form entire facades.

**cladding** – exterior surface material that provides the weather protection for a building

**clapboard (weatherboard)** – a house siding of long, narrow boards with one edge thicker than the other, overlapped to cover the outer walls of frame structures

**column** – upright pillar serving as a support or ornament for a building

**Classical Orders:**

- *Doric* (earliest and simplest) Doric columns usually have no base; the shaft is thick and broadly fluted, the capital is plain.
- *Ionic* (second) Ionic columns are usually slender, with fluted shafts, and prominent volutes on the capital.
- *Corinthian* (latest and most ornate Order) Corinthian columns are slender, usually fluted with capitals elaborately carved with acanthus leaves.

**coping** – a cap or covering on top of a wall, either flat or sloping, to shed water

**cornice** – (1) a decorative feature found under the eaves of a roof; (2) projecting ornamental molding hiding joint of a ceiling or roof, and wall

**course** – a continuous horizontal row of brick or stone in a wall

**cupola** – a small tower raised above the roof, also called a belvedere

**dentils** – small, oblong blocks spaced evenly in a band to decorate a cornice

**dormer** – an upright window projecting from the sloping roof of a building; also the roofed structure housing such a window

**eave** – the projecting overhang at the lower edge of a sloping roof

**eclectic** – mixing elements from different sources, including styles, colors, or materials

**elevation** – one of the external faces of a building; an architectural drawing (to scale) of a building façade

**ell** - an addition or wing to a house that shapes it like an “L” or a “T”

**entablature** – in classical architecture, the part of the structure between the column capital and the roof or pediment



**environmental setting** – (1) The boundaries of a designated site, including buildings and grounds, within which the HDC will review proposed alterations; (2) The area associated with an historic site that contributes to its overall historic character, including buildings and grounds.

**façade** – the faces of a building, often identified by the cardinal direction (N,S,E,W) which it faces

**fascia** – a plain horizontal band; a fascia board will cover the joint between the wall and the projecting eaves

**fanlight** – a semicircular or fan-shaped window with radiating members or tracery set over a door or window; may or may not be operable (see transom)

**fenestration** – the pattern of windows in a building

**finial** – an ornament, often urn-shaped, used to decorate the top of a spire, gable, or pinnacle

**frieze** – an ornamental horizontal band or strip in a wall

**gable** – (1) that part of the wall, triangular in shape, defined by the sloping sides of a double pitch or gable roof; (2) the end wall of a building

**glazing** – the glass in a window

**half-timbering** – wall construction in which spaces between wooden timber framing are filled with brick, stone, or other material; used decoratively in 20th century

**head** – the top of the frame of a window or door

**header** – the end of the brick seen in a brick course

**jamb** – the straight vertical side of a doorway or window

**joist** – horizontal structural members to which the boards of a floor or the lath for a ceiling are nailed

**keystone** – a wedge shaped stone in the crown of an arch or center of a lintel to bind the structure

**lancet** – a narrow pointed arched opening seen in Gothic Revival

**lattice** – openwork produced by interlacing of wood laths or other thin strips, used as screening, especially under a porch

**leaded glass** – small panes of glass held in place with lead strips; glass may be clear or colored (stained)

**lean-to** – a small building added to another building, usually covered by a sloping (or shed) roof

**light (lite)** – small panes of window set into an individual sash

**light pollution** - the alteration of light levels in the outdoor environment (from those present naturally) due to man-made sources of light. Light pollution competes with starlight in the night sky, and disrupts ecosystems.

**light trespass** - a form of light pollution, also described as unwanted spill light, which impinges on other people's personal space, e.g. a floodlight illuminating a neighbor's yard.

**lime mortar** – lime + sand + water; used prior to late 19<sup>th</sup> century to lay brick and stone, and for parging exterior masonry walls

**lintel** – the horizontal top piece of a window or door opening

**masonry** – work done by masons, including brick, stone, or concrete block

**massing** – the expression of interior volume as form

**mortar** – a material used in the plastic state and troweled into place to harden (see lime mortar, Portland cement); used to consolidate brick, stone, and concrete block work

**mullion** - the subsidiary vertical member of the frame of a door or window

**muntin** – the thin vertical bars that vertically divides a window or other opening into small lights

**newel** – the principal post in a banister at the foot of a staircase and at the corners of landings

**oriel** – a projecting window on an upper floor, often supported with brackets

**Palladian windows/doors** – a round-headed window or door flanked by lower rectangular windows, and separated by columns

**parapet** – a protective railing or low wall at the edge of a roof, balcony or terrace

**parging (pargeting)** – to coat with plaster, particularly foundation walls and rough masonry (see stucco)

**pediment** – a triangular section, or gable end, often used above doors and windows or at porch entrances

**pervious (permeable) surface** – a variety of types of pavement, pavers or other devices that provide stormwater infiltration while serving as a structural surface

**piazza** - an American term for a broad veranda

**pier** – point foundation, such as may support a column or porch

**pilaster** – a flat form of a pillar or column applied to a wall and used as decoration

**pintel** - a pin or a bolt on which another part pivots

**pitch** – the degree of slope of a roof, usually given in the form of a ratio, such as 6:12

**porch** – a roofed exterior space on the outside of a building

**porte-cochere** – a large covered entrance porch through which vehicles can drive and passengers can alight from a vehicle and enter a building

**portico** – a covered and usually projecting entrance porch supported by classical columns and often crowned with a pediment, forming the centerpiece of the front façade of the building

**Portland cement** – a high-strength material (commercially dating to 1824) used as a component of concrete and modern hard mortars.

**quoins** – rectangles of stone or wood used to accentuate and decorate the corner of a building

**repointing** – removing old mortar from joints of masonry construction and filling in with new mortar

**return** – the part of a pattern that continues around a corner

**ridge** – the (top) line of intersection of the opposite sides of a sloping roof

**riser** – the vertical face of a step (see tread)

**roofs – gabled:** **roof** sloping downward in two parts from a central ridge; the gable is the part of an outside wall in the shape of a triangle between the sloping roofs

- *gambrel* – a ridged roof with two different slopes on each side of the ridge, the lower slope having a steeper pitch (sometimes called a Dutch gambrel roof)
- *hipped* – a roof with four uniformly pitched or sloping sides
- *jerkinhead* – a gable roof with a hipped end
- *mansard* – two slopes on each of its four sides; one part very steep and curved, often with dormers

**rusticated block** – concrete block formed to replicate rough stone

**sash** – the moveable framework holding the glass in a window or door

**sill** – the horizontal water-shedding element at the bottom of a window or door frame

**siding** – the exterior wall covering of a structure

**spire** – a tapering roof topping a tower; steeple

**shingles** – thin pieces of wood used in overlapping rows to cover roofs and exterior walls of houses; can be cut in decorative shapes

**sidelights** – windows at either side of a door sometimes in conjunction with a transom above a door

**soffit** – the underside of a beam, arch or other architectural element.

**stoop** – the landing and stairs, covered or uncovered, leading to the main entrance of a house

**streetscape** – the combined visual image from all of the physical elements found on both sides of a street, including the property up to the building front.

**stucco** – exterior plaster

**stretcher** – the long side of brick when laid horizontally

**studs** – the upright framing members for a wall

**transom window** – a window above a door; commonly hinged for separate operation

**tread** – the horizontal surface of a step (see riser)

**trim** – the framing of features on a façade which may be of a different color material, or design than the adjacent wall surface

**turret** – a little tower, set at an angle to the main wall; often at a corner and projecting above a building

**veranda** – a roofed, open gallery or porch; a large covered porch extending along one or more sides of a building and designed for outdoor living.

**verge board** – see bargeboard

**vernacular** – used to describe buildings with little or no stylistic pretension, or those which may reflect a rural interpretation of high-style architecture of the day

**watertable** – a slight projection of the lower masonry or brick wall a few feet above the ground as a protection against rain

**windows** – glass set into a sash, or frame

- *double-hung* - a window with two sashes, one above the other arranged to slide vertically past each other
- *casement* – a window with the sash hung vertically and opening inward or outward

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